

HARMONIC MIXER BASED TELEVISION TUNER AND METHOD OF PROCESSING A RECEIVED RF SIGNAL

Abstract

A first local oscillator operating at a first frequency provides a first reference signal and a second reference signal. The second reference signal is the first reference signal phase shifted by 90 degrees. A first harmonic mixer has inputs coupled to a received RF signal, the first reference signal, and the second reference signal. A band-pass filter is coupled to an output of the first harmonic mixer. A second local oscillator operates at a second frequency and provides a third, a fourth, a fifth, and a sixth reference signal, which are phase shifted by 0 degrees, 45 degrees, 90 degrees, and 135 degrees, respectively. A second harmonic mixer has inputs coupled to an output of the band-pass filter, the third reference signal, and the fifth reference signal. A third harmonic mixer has inputs coupled to the output of the band-pass filter, the fourth reference signal, and the sixth reference signal.